

W11

Technical Data Sheet

11/2009

Knauf Metal Stud Partitions

- | | |
|-------------|----------------------------------------------------------------------------------------|
| W111 | Knauf Metal Stud Partition - single metal stud frame, single layer cladding |
| W112 | Knauf Metal Stud Partition - single metal stud frame, double layer cladding |
| W115 | Knauf Metal Stud Partition - double metal stud frame, double layer cladding |
| W116 | Knauf Installation Wall - linked double metal stud frame, double layer cladding |

Updated wall heights
with the new
Knauf CW+ Studs

The structural, statical properties, and characteristic building physics of Knauf systems can solely be ensured with the exclusive use of Knauf system components, or other products expressly recommended by Knauf.

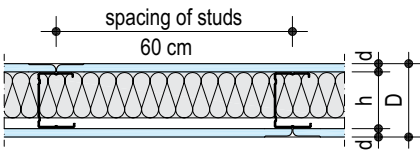
Knauf Metal Stud Partitions

W11

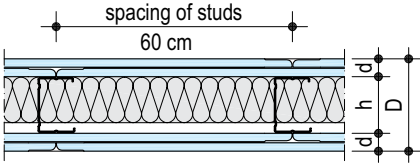
Technical Data / Sound Protection

System	Technical data	Sound protection	In-sulation
	dimensions wall stud cladding thick- (ca- thick- ness vity) ness type D h d mm mm mm	proof R_{w,R} dB 2)	nominal thickness mm 3)
For legend see page 3	approx. kg/m ² 1)		

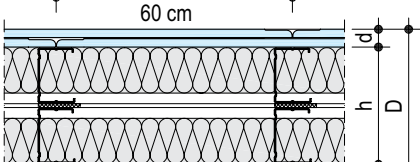
W111 Metal Stud Partition single metal stud frame - single layer cladding

	75	50	Knauf 12.5 RG FR MR FM	25	42	40
	95	70			43	60
	117	92			44	80
	171	146			45	100

W112 Metal Stud Partition single metal stud frame - double layer cladding

	100	50	Knauf 2 x 12.5 RG FR MR FM	45	50	40
	120	70			51	40
	142	92			51 52	40 60
	196	146			53	100

W115 Metal Stud Partition double metal stud frame - double layer cladding

	155	105	Knauf 2 x 12.5 RG FR MR FM	48	59	2x40
	195	145			58 61	60 2x60
	239	189			60 63	80 2x80

For notes and sound protection proofs see page 3

Knauf Metal Stud Partitions

W11

Technical Data / Sound Protection

System	Technical data	Sound protection	In-sulation
	dimensions wall thickness D mm	proof $R_{w,R}$ dB 2)	nominal thickness mm 3)
	stud (cavity) h mm		
	cladding thickness d mm		
	type approx. kg/m ² 1)		

W116 Installation Wall double metal stud frame - double layer cladding

	≥ 220 ≥ 170 2 x 12.5 Knauf RG 49 FR MR FM	52	40
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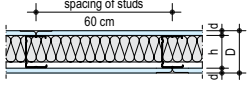
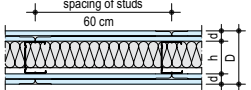
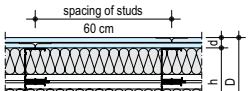
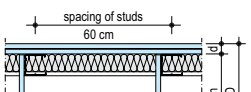
- weight without insulation
- $R_{w,R}$ = calculation value of sound reduction index of the separating partition according to EN ISO 140-3 and EN ISO 717-1 without longitudinal transmission via flanking components
- insulation according to DIN EN 13162 length related flow resistance according to DIN EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$ thermal conductivity class: 040

Note Sound protection values are valid only in connection with the use of Knauf CW+ series studs.

Note on Board Abbreviations

Board Type	German (DIN 18180)	European (EN 520)	British (BS 1230)
Knauf Regular Gypsum Board (RG)	GKB	Type A	Type 1
Knauf Fire-Resistant Gypsum Board (FR)	GKF	Type A, F	Type 5
Knauf Moisture-Resistant Gypsum Board (MR)	GKBI	Type A, H2	Type 3
Knauf Fire and Moisture-Resistant Gypsum Board (FM)	GKFI	Type A, F, H2	Type 3, 4, 5

Technical Data / Fire Protection

System	Fire Rating ⁽²⁾ (hours)	Cladding			Stud				min. wall Thickness (mm)
		Board Type / Building Material Class ⁽¹⁾	min.board thickness (mm)	No. of Layers	Stud Type	min. Gauge (mm)	min. width (mm)	Max. Spacing of Studs (mm)	
W111 Metal Stud Partition 	0.5	Knauf FR or Knauf FM / A2-s1, d0 (B)	12.5	1	Knauf CW+ Studs	0.6mm	50	600	75
	1	Knauf FR or Knauf FM / A2-s1, d0 (B)	15	1	Knauf CW+ Studs	0.6mm	50	600	80
W112 Metal Stud Partition 	1	Knauf RG or Knauf MR / A2-s1, d0 (B)	12.5	2	Knauf CW+ Studs	0.6mm	50	600	100
	1.5	Knauf FR or Knauf FM / A2-s1, d0 (B)	12.5	2	Knauf CW+ Studs	0.6mm	50	600	100
	2	Knauf FR or Knauf FM / A2-s1, d0 (B)	15	2	Knauf CW+ Studs	0.6mm	50	600	110
W115 Metal Stud Partition 	1	Knauf RG or Knauf MR / A2-s1, d0 (B)	12.5	2	Knauf CW+ Studs	0.6mm	50	600	155
	1.5	Knauf FR or Knauf FM / A2-s1, d0 (B)	12.5	2	Knauf CW+ Studs	0.6mm	50	600	155
	2	Knauf FR or Knauf FM / A2-s1, d0 (B)	15	2	Knauf CW+ Studs	0.6mm	50	600	165
W116 Metal Stud Partition 	1	Knauf RG or Knauf MR / A2-s1, d0 (B)	12.5	2	Knauf CW+ Studs	0.6mm	50	600	220
	1.5	Knauf FR or Knauf FM / A2-s1, d0 (B)	12.5	2	Knauf CW+ Studs	0.6mm	50	600	220
	2	Knauf FR or Knauf FM / A2-s1, d0 (B)	15	2	Knauf CW+ Studs	0.6mm	50	600	220

Note

Fire Protection values are valid only in connection with the use of Knauf CW+ Stud Series

(1) Non combustibility class according to DIN EN 13501

(2) All fire rating durations are in accordance with BS476: Part22:1987, EN1364-1:1999 and DIN4102-4.

For fire rating performance of Knauf W11 Partition Systems according to ASTM E119 contact Knauf Drywall Systems Technical Team

Fire Protection: Connections

Connections of "lightweight" partitions to classified suspended ceilings

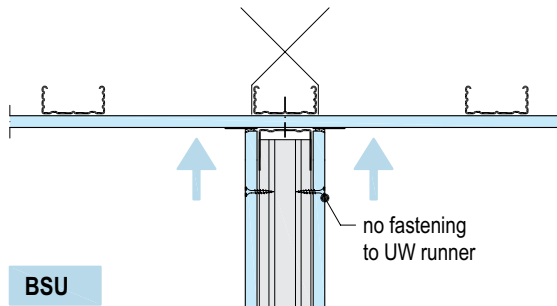
scheme drawings

Connections of partitions to classified ceilings (suspended ceilings) are only allowed if it is ensured that in case of fire and a premature collapse of the partition the scrap of the partition may fall down without additional loading of the ceiling.

The following solutions are optional for the connection:

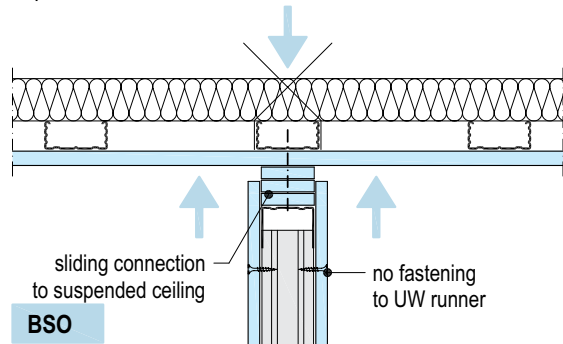
Fire protection from below

For suspended ceilings with fire protection **from below** do not fasten cladding to UW runner, but apply cladding tightly up to ceiling.



Fire protection from below and from above / from above

For suspended ceilings with fire protection **from below and from above / from above** install a sliding ceiling connection as standard implementation with at least 15 mm allowable movement.



Note

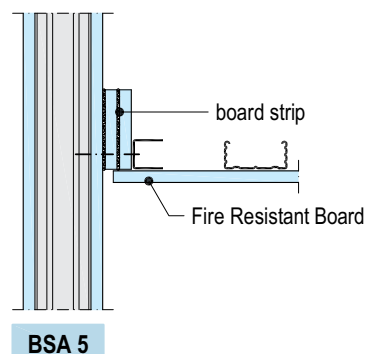
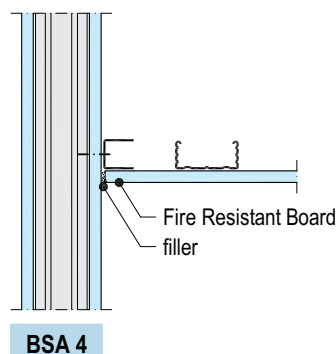
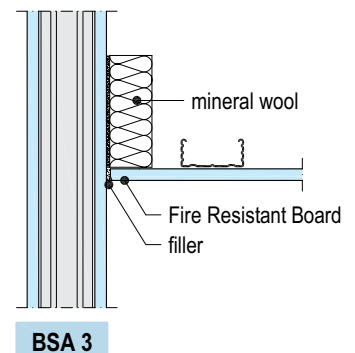
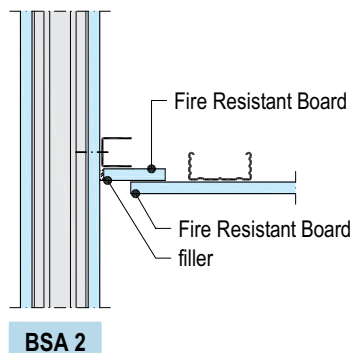
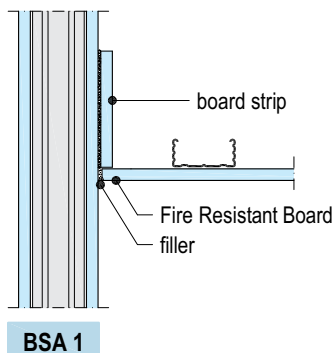
In case of fire protection requirements for the partition, the suspended ceiling should have at least the same fire rating.

Fire protective connections to walls

Examples - scheme drawings

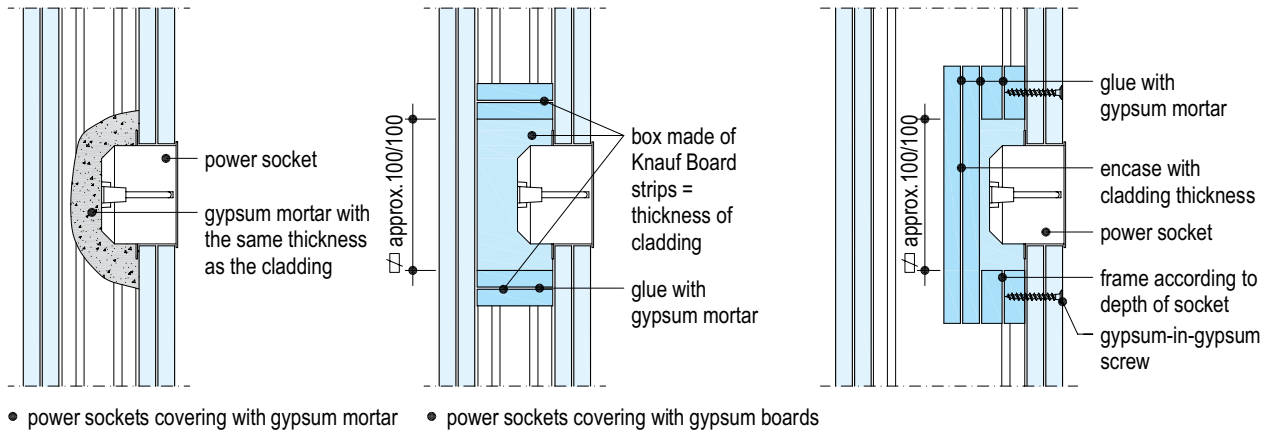
Suspended ceilings in connection with basic ceilings of building type I to IV as well as suspended ceilings solely for fire protection from below and / or from above that are fire rated 30 to 90 minutes can be connected to partitions if they are of the same fire rating.

Wall background should be even in the area of the connection. Specific levelling preparations might be necessary. The connection of the suspended ceiling has to be tight and covered.

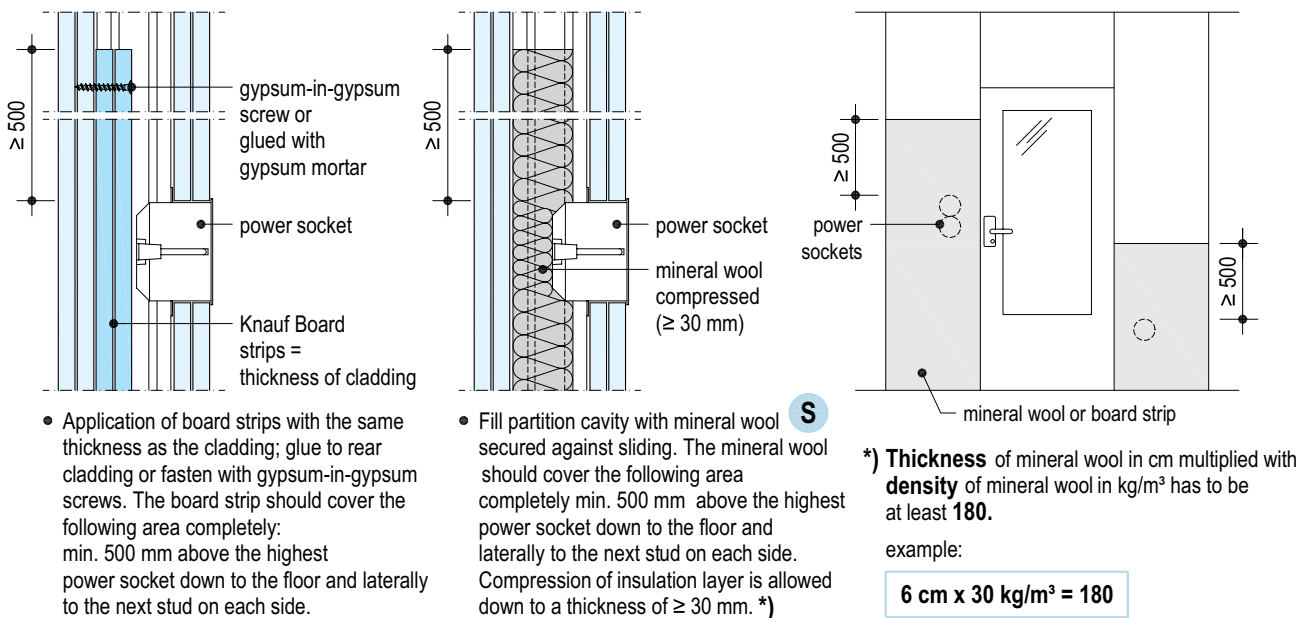


Fire Protection: Installation of Power Sockets

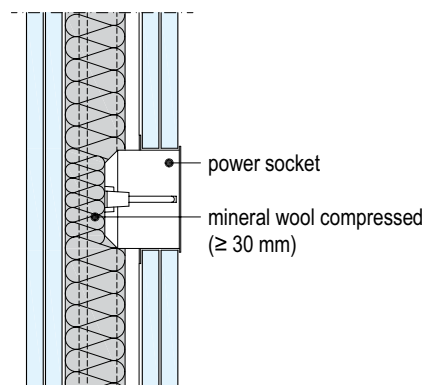
Partitions with insulation min. B2 resp. without insulation



• Only for single metal stud partitions



Partitions according to DIN 4102-4 with mineral wool insulation melting point ≥ 1000°C



- insulation layers that are necessary for fire protection should be preserved but are allowed to be compressed down to ≥ 30 mm.

Note

- Power sockets, switch sockets, splitter sockets etc. are allowed to be installed at any position, but not opposite to each other.
- Entry of single electric cables is allowed. The remaining opening has to be closed with gypsum mortar.

Mineral wool insulation layer acc. to DIN EN 13162, chapter 3.1.1

- S** building material class A
melting point ≥ 1000° C
acc. to DIN 4102-17

scheme drawings - all dimensions in mm

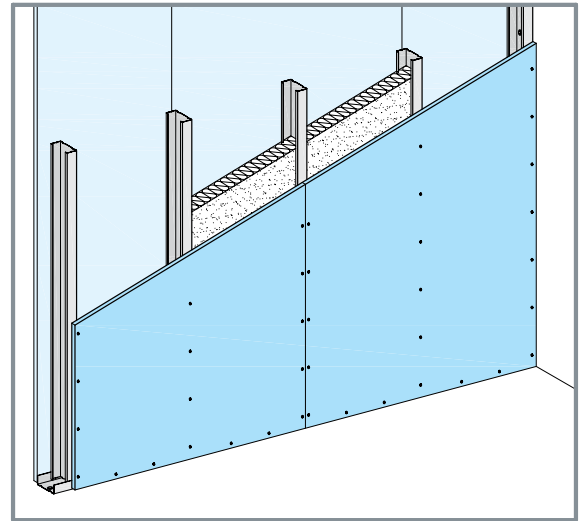
Knauf Metal Stud Partition

W111

Single Metal Stud Frame, Single Layer Cladding

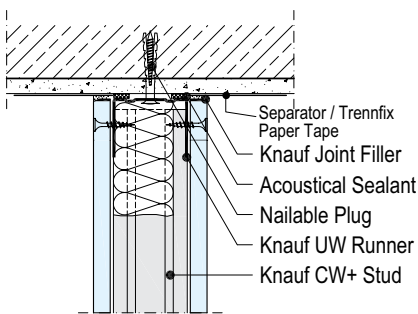
Wall heights

Studs	Spacing of studs	Maximum wall heights	
		Installation zone	
metal thickness 0.6mm flange length 44mm	cm	1 (in m)	2 (in m)
Knauf Stud	60	3.15(*)	-
CW+50	40	3.35	-
	30	3.8	-
Knauf Stud	60	3.90	-
CW+70	40	4.65	4.65
	30	5.10	5.10
Knauf Stud	60	5.15	5.15
CW+92	40	5.90	5.90
	30	6.45	6.45
Knauf Stud	60	7.85	7.85
CW+146	40	8.75	8.75
	30	9.30	9.30

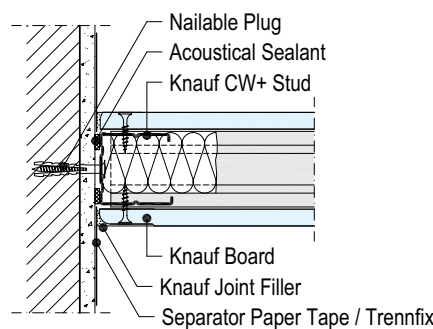


Maximum wall heights calculated based on limiting deflection of L/240 at 240Pa
(*) without any bracket load

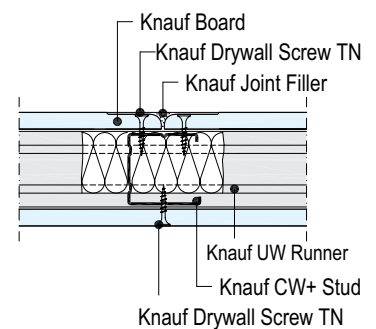
Details scale 1:5



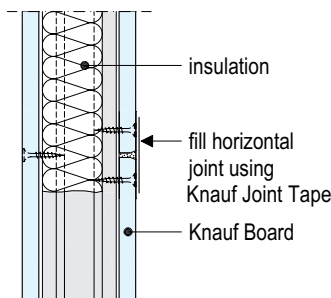
W111-VO1 Connection to ceiling



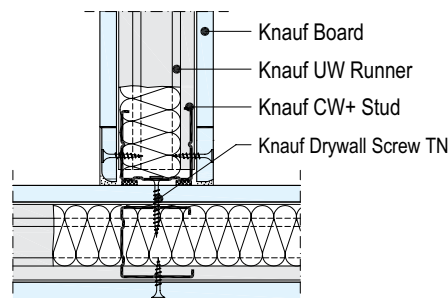
W111-A1 Connection to solid wall



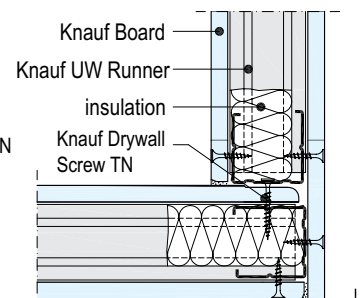
W111-B1 Joint



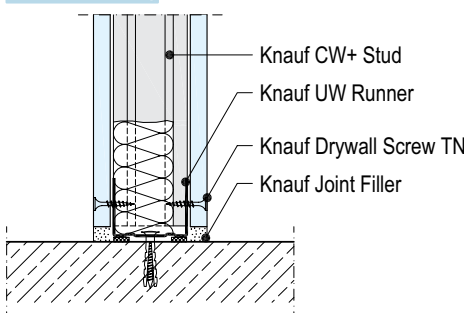
W111-VM1 Joint



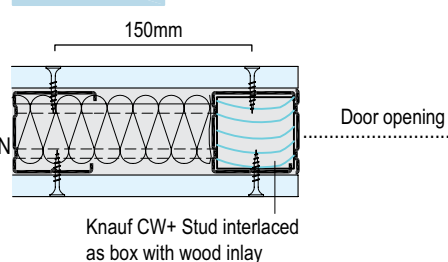
W111-C1 T-Junction



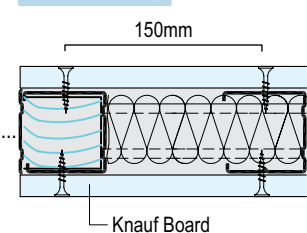
W111-D1 Corner



W111-VU1 Connection to floor



W111-E2 Door opening with CW+ studs



Note For ceramic tiling maximum spacing of studs is 40 cm. (Knauf recommends W112 for ceramic tiling)

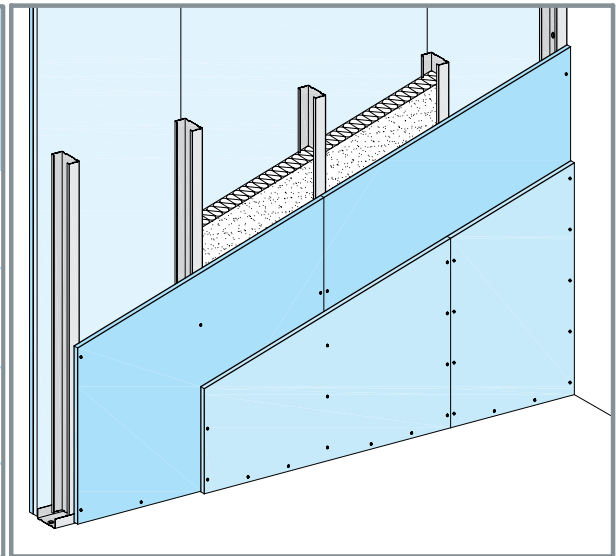
Knauf Metal Stud Partition

W112

Single Metal Stud Frame, Double Layer Cladding

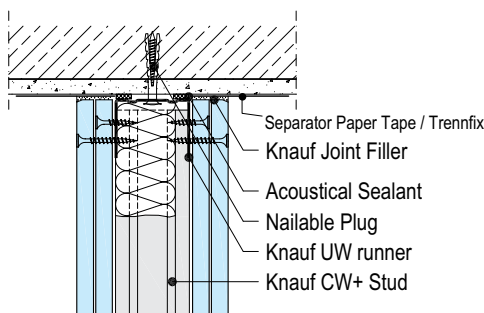
Wall heights

Studs	Spacing of studs	Maximum wall heights	
		Installation zone	
metal thickness 0.6mm flange length 44mm	cm	1 (in m)	2 (in m)
Knauf Stud	60	3.45	-
	40	4.25	3.00
CW+50	30	4.80	4.80
	60	4.80	4.80
Knauf Stud	40	5.75	5.75
	30	6.30	6.30
CW+70	60	6.30	6.30
	40	7.25	7.25
Knauf Stud	30	7.80	7.80
	60	9.50	9.50
CW+92	40	10.45	10.45
	30	11.05	11.05
Knauf Stud	60	11.05	11.05
	40	10.45	10.45
CW+146	30	11.05	11.05
	60	10.45	10.45

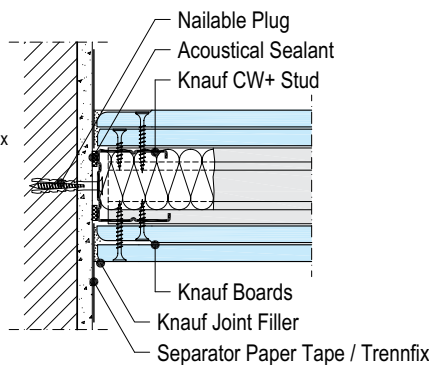


Maximum wall heights calculated based on limiting deflection of L/240 at 240Pa

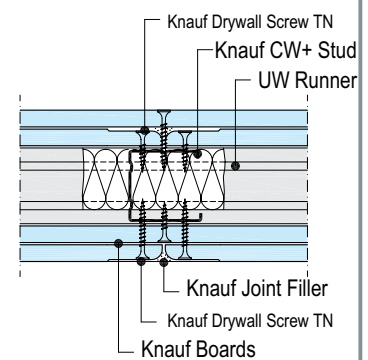
Details scale 1:5



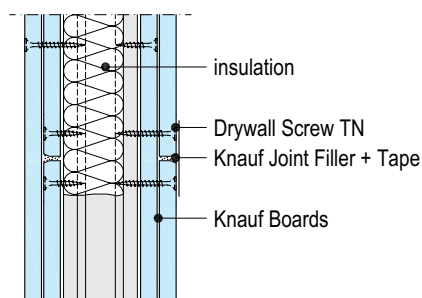
W112-VO1 Connection to ceiling



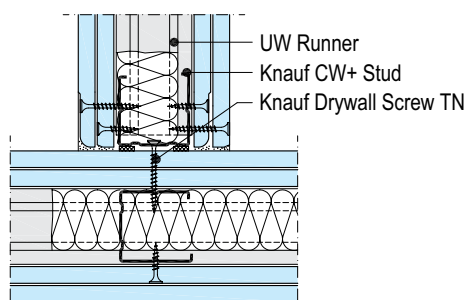
W112-A1 Connection to solid wall



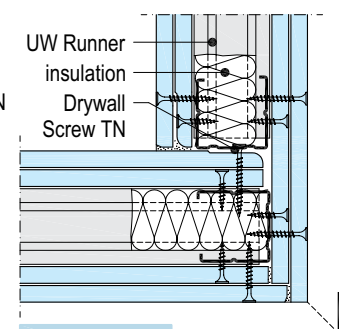
W112-B1 Joint



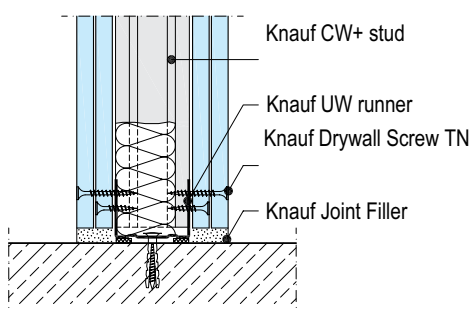
W112-VM1 Joint



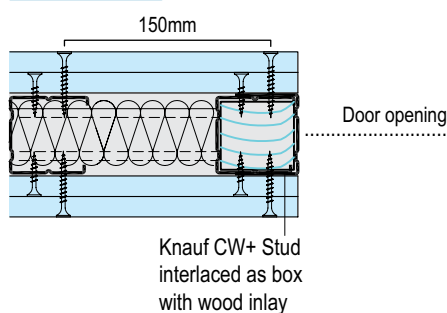
W112-C1 T-Junction



W112-D1 Corner



W112-VU1 Connection to floor



W112-E2 Door opening with CW+ studs

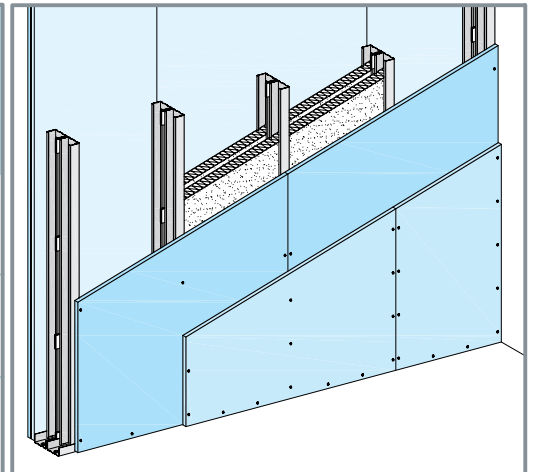
Knauf Metal Stud Partition

W115

Double Metal Stud Frame, Double Layer Cladding

Wall heights

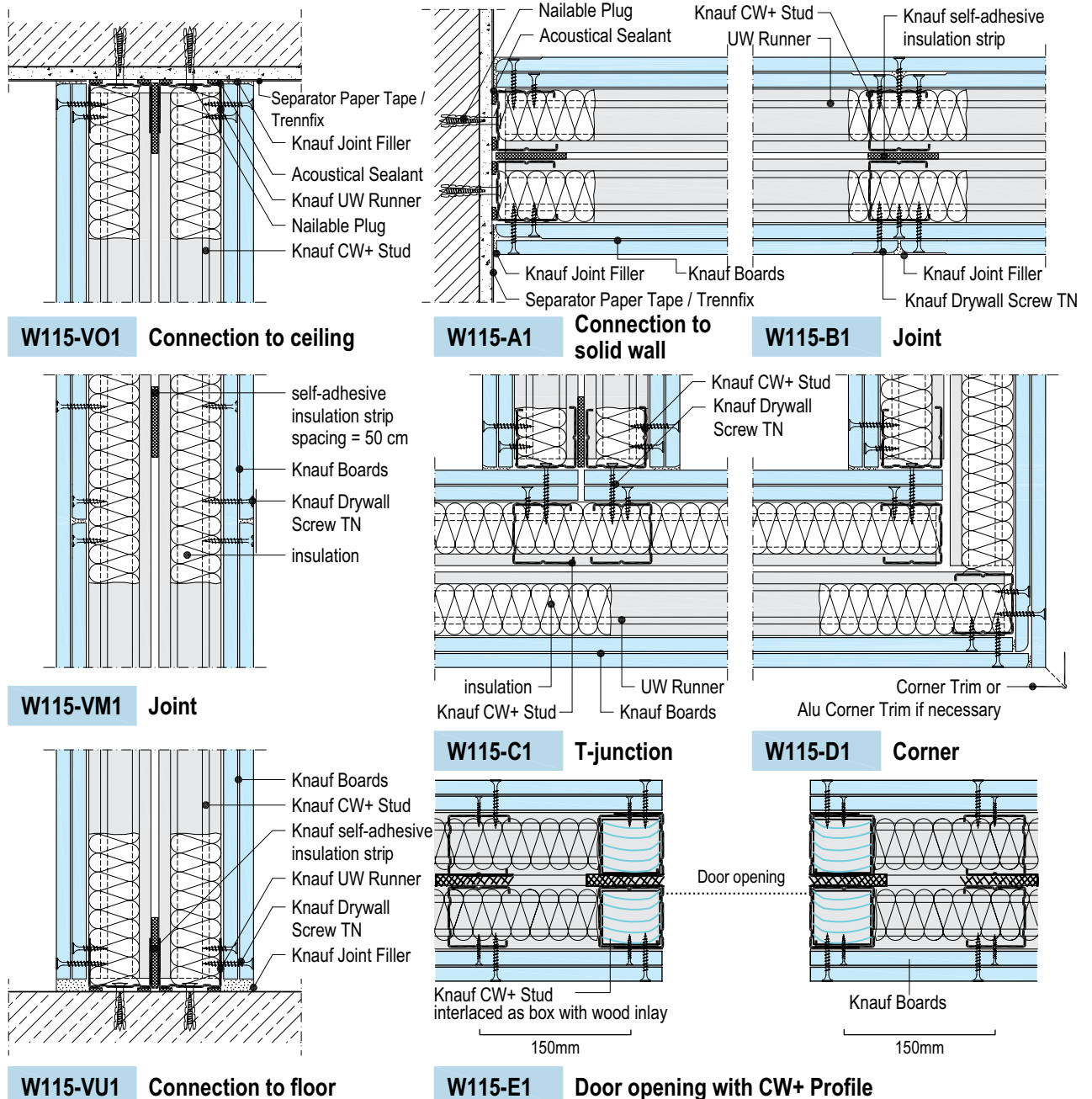
Studs	Spacing of studs	Maximum wall heights	
		Installation zone	
metal thickness 0.6mm flange length 44mm	cm	1 (in m)	2 (in m)
Knauf Stud CW+50	60	3.35	-
Knauf Stud CW+70	60	4.15	2.80 (*)
Knauf Stud CW+92	60	5.05	5.05



Maximum wall heights calculated based on limiting deflection of L/240 at 240Pa

(*) without any bracket load

Details scale 1:5



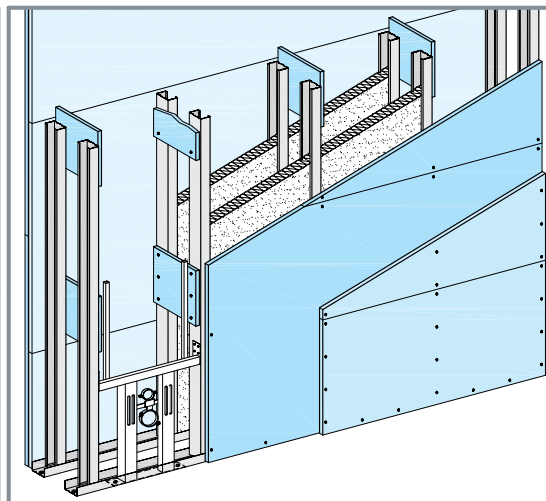
Knauf Installation Wall

W116

Double Metal Stud Frame, Double Layer Cladding

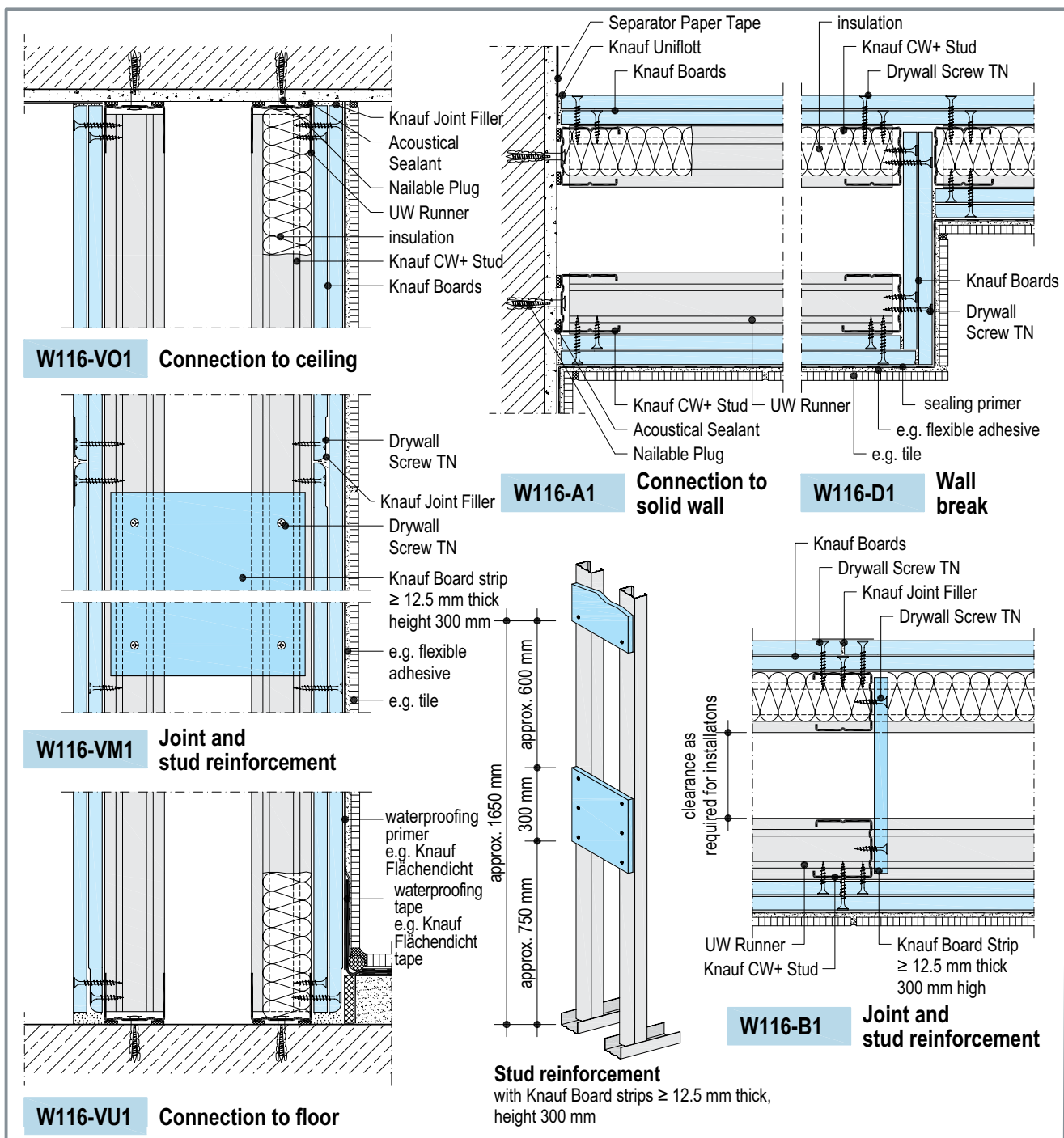
Wall heights

Studs	Spacing of studs	Maximum wall heights	
		Installation zone	
metal thickness 0.6mm flange length 44mm	cm	1 (in m)	2 (in m)
Knauf Stud CW+50	60	3.80	-
Knauf Stud CW+70	60	5.10	5.10
Knauf Stud CW+92	60	6.45	6.45



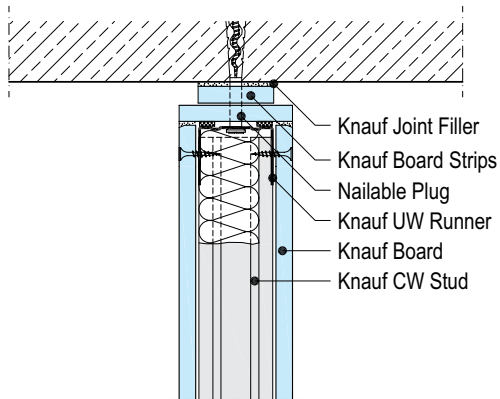
Maximum wall heights calculated based on limiting deflection of L/240 at 240Pa

Details scale 1:5

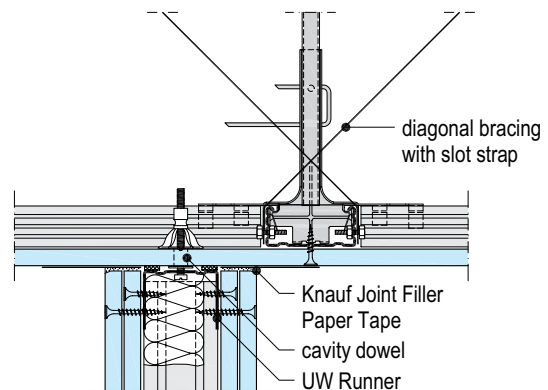


Details: Connections to Ceilings

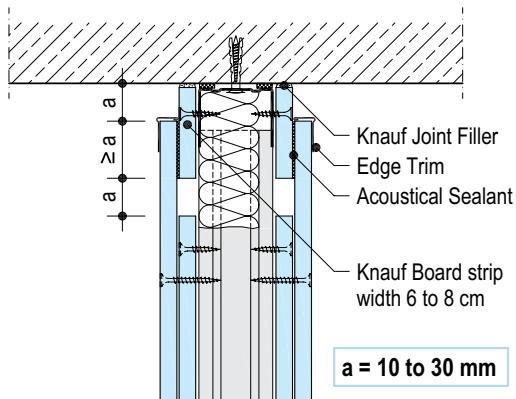
Details scale 1:5



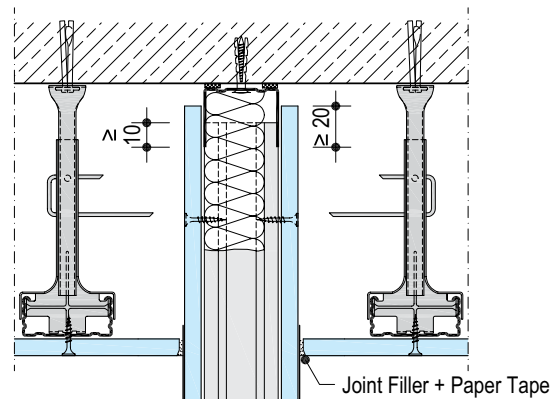
W111-VO3 Connection with shadow gap for fire protection



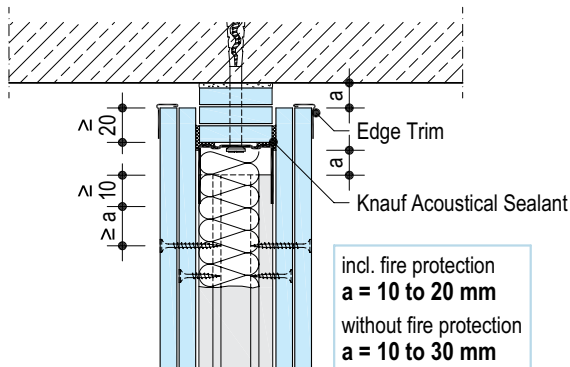
W112-VO4 Connection to suspended ceiling



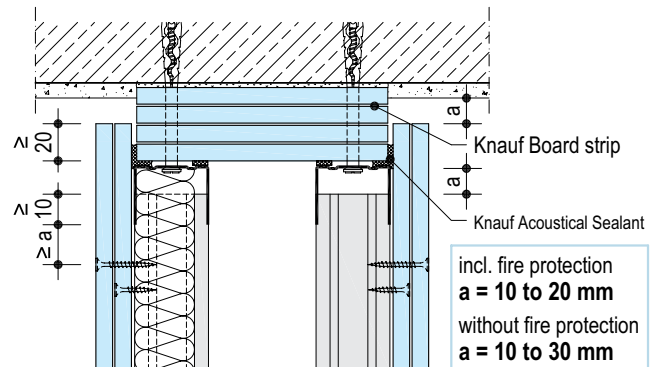
W112-VO3 Deflection head
reduction of sound protection approx. 3 dB



W111-VO2 Deflection head with
separated suspended ceiling



W112-VO2 Deflection head for
fire and / or sound
protection requirements

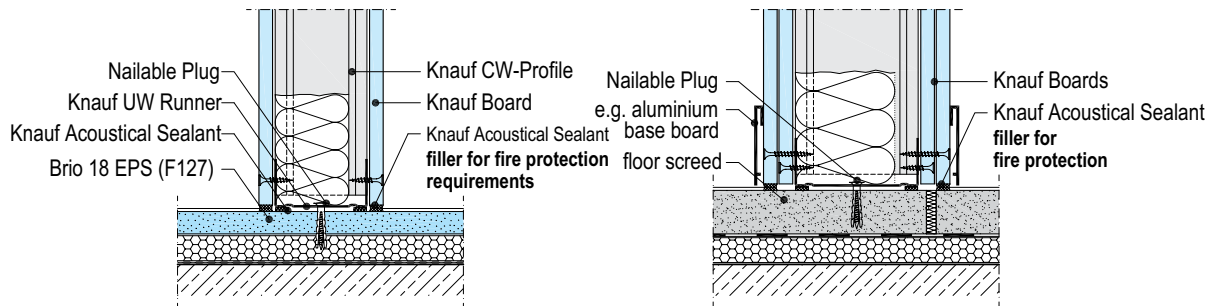


W116-VO2 Deflection head for
fire and / or sound
protection requirements

Note

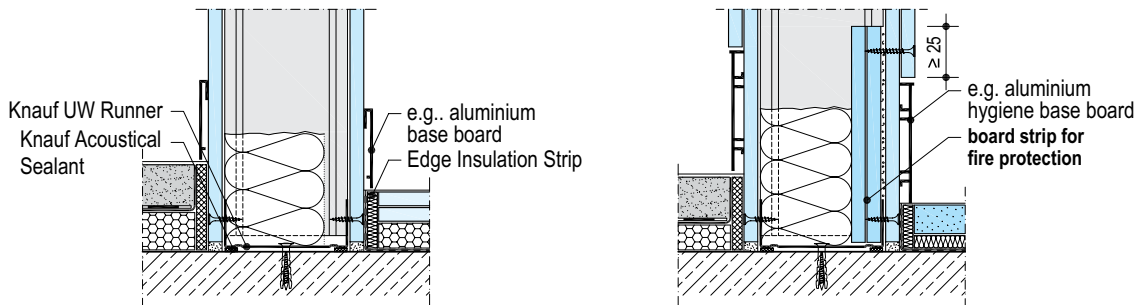
Solutions for higher ceiling deflections
on request

Details scale 1:5



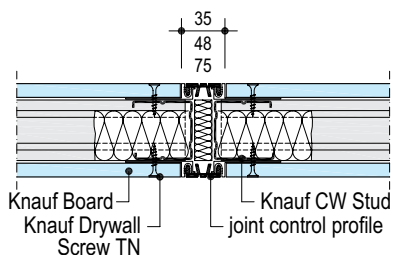
W111-VU2 Connection to Knauf Floor Elements F127

W112-VU2 Connection to floor screed, separated

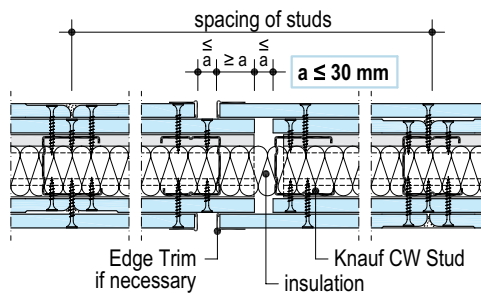


W111-VU3 Connection to basic floor

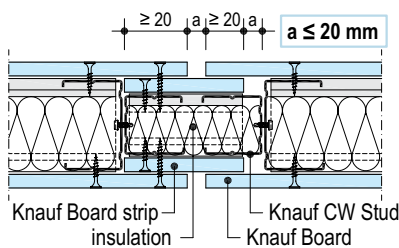
W112-VU3 Reduced connection to basic floor



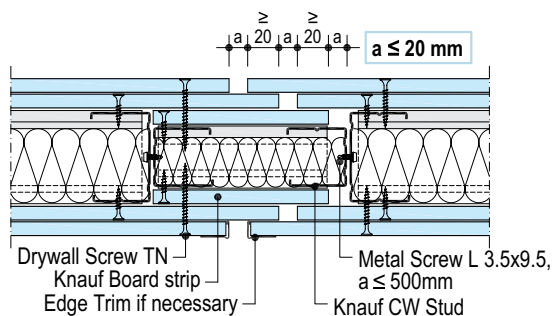
W111-BFU2 Movement joint with joint profile



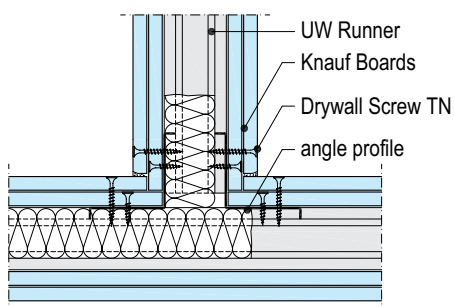
W112-BFU2 Movement joint



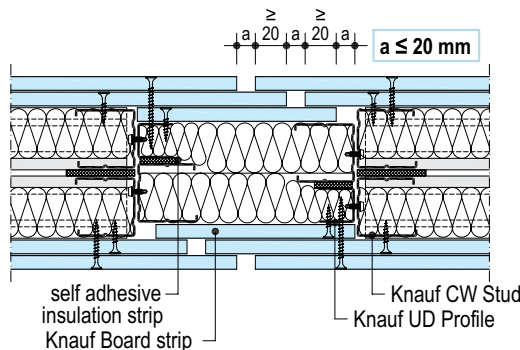
W111-BFU1 F30 movement joint



W112-BFU1 F90 movement joint



W112-C2 T-junction with angle profiles



W115-BFU1 F90 movement joint

Knauf Metal Stud Partitions

W11

Stud Joints / Partitions W111 and W112 without Connection to Ceiling

Vertical stud joints

Knauf Stud Overlap u

CW+	50	≥ 50 cm
CW+	70	≥ 70 cm
CW+	92	≥ 92 cm
CW+	146	≥ 146 cm

Displace stud joints vertically

fit-up aid:

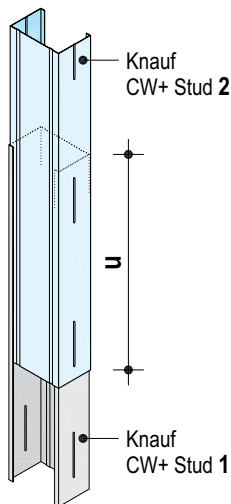
Crimp, rivet or screw Studs at overlap



Knauf Stamp Pliers

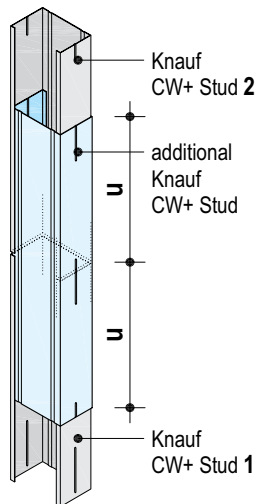
Variation 1

2 Knauf CW+ Studs interlaced as box



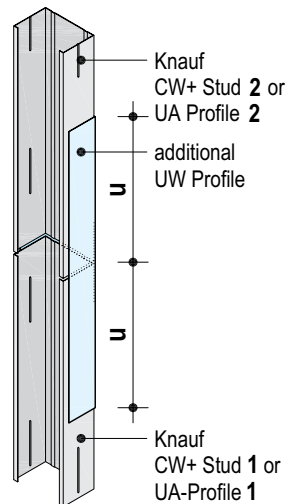
Variation 2

2 Knauf CW+ Studs butt joint interlaced with additional Knauf CW+ Stud



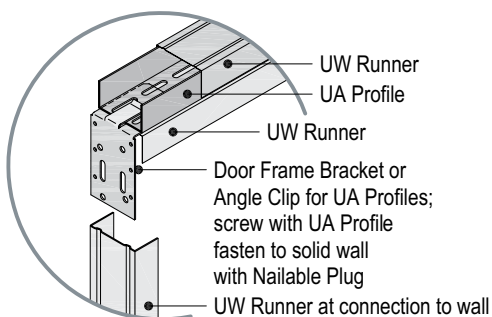
Variation 3

2 Knauf CW+ Studs butt joint connected with additional UW Runner

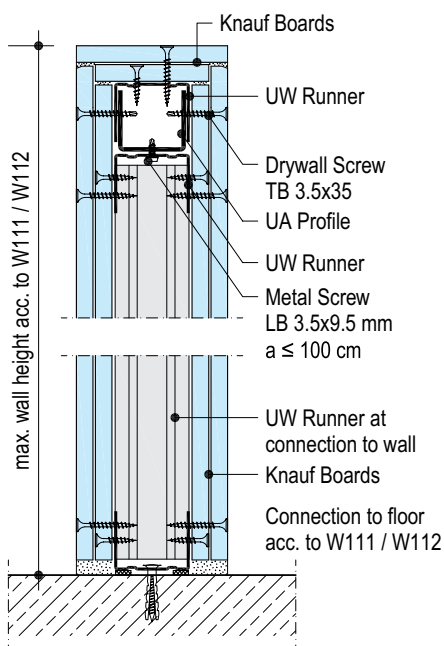


Partitions W111 / W112 without connection to ceiling

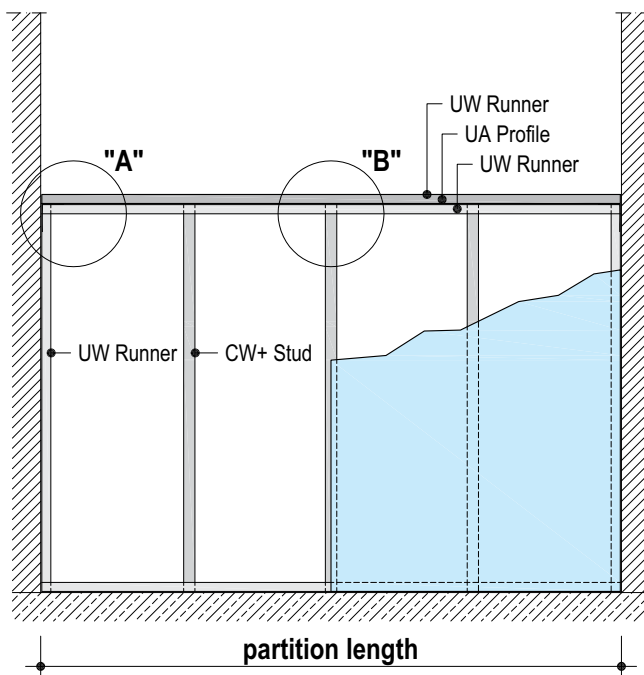
• without fire protection



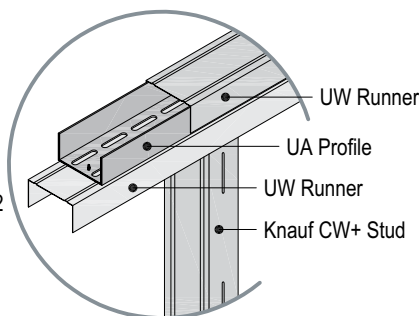
Detail "A"



Vertical section



View



Detail "B"

Max. partition length (span of UA Profile)

UA Profile	max. allowable partition width	
	cladding	
	12.5 mm (W111)	2x 12.5 mm (W112)
metal thickness	m	m
2 mm		
UA 50	3	4
UA 70	4.5	5.5
UA 92	5	6.5

Bent Partitions with Bent Knauf Boards and UW Runners 70x32x0.6 Pre-punched at Web

Inside Arch - Concave	Outside Arch - Convex	Board thickness d mm	Bending radius r	Length of layout L
			dry bending mm wet bending mm	<ul style="list-style-type: none"> angle α 90° $L = \frac{r \cdot \pi}{2}$ angle α 180° $L = r \cdot \pi$ all angles up to α 180° $L = \frac{\alpha \cdot r \cdot \pi}{180}$
		6.5 (Mold Board) ≥ 1000 9.5 ≥ 2000 12.5 ≥ 2750	≥ 300 ≥ 500 ≥ 1000	
longitudinal bending only				

Biegeanleitung

wet bending

length of layout longitudinal direction

batten to fix the board

angle or CD Channel to support boards

Knauf Board strip

cut board d ≥ 12.5 mm

molding device

Wet bending

- Put the cut-to-length Knauf Boards on a grid made of channels or similar with the side to be compressed on top and exceeding the grid on the perimeters (so excess water can drip off).
- Perforate the board laterally and longitudinally with Spike Roller.
- Wet the board by spraying or with lambskin roller and let it settle for a few minutes. Repeat process until excessive water drains.
- Lay board on precast molding device, fix with tape and let it dry.

molding device

Dry bending

- Bend Knauf Boards over metal grid or frame.
- Fix with Drywall Screws following the bending continuously.

Detail scale 1:5

UW Runner 70x32x0.6

Knauf CW Stud 70x35x0.6

UW Runner 70x32x0.6

Drywall Screw TN

e.g. Knauf Mold Boards 2x 6.5 mm

Assembly

- cut outside flange at web punches
- bend UW Runners to required radius
- connect Knauf CW Studs to pre-punched UW Runners by crimping
- cladding lateral

spacing Knauf CW Studs: ≤ 312.5 mm (outside radius)

spacing Nailable Plug: ≤ 300 mm

Nailable Plug

UW Runner 70x32x0.6

Knauf Joint Filler+ Knauf Joint Tape

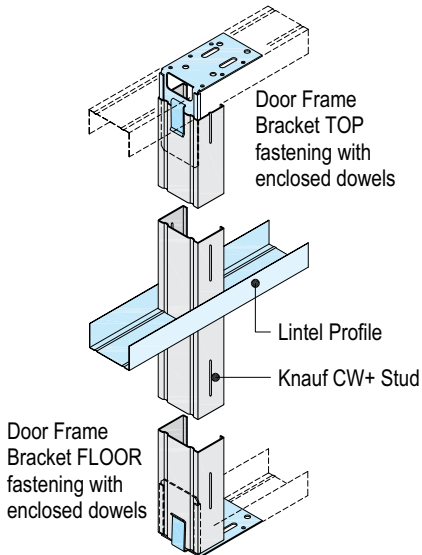
W111-SO1 Bent Partition

Door Openings: Stud Construction / Cladding / Door Panel Weight

Stud construction

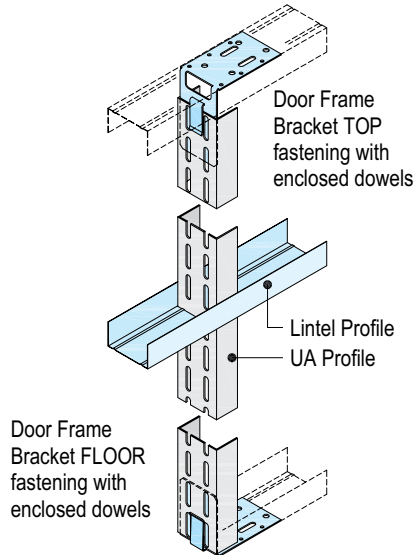
Variation CW+

- acc. to DIN 18340
 - wall heights ≤ 2.60 m
 - door width ≤ 0.885 m
 - door panel weight ≤ 25 kg



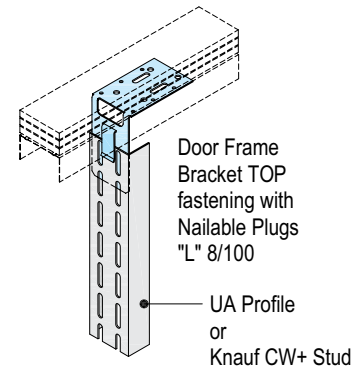
Variation UA

- remove plastic strip from Door Frame Bracket
- acc. to DIN 18340
 - wall heights > 2.60 m
 - door width > 0.885 m
 - door panel weight > 25 kg



Deflection head

- possible with CW+ or UA



scheme drawings

Note

Door Frame Brackets for Knauf CW+ studs 50/70/92/146

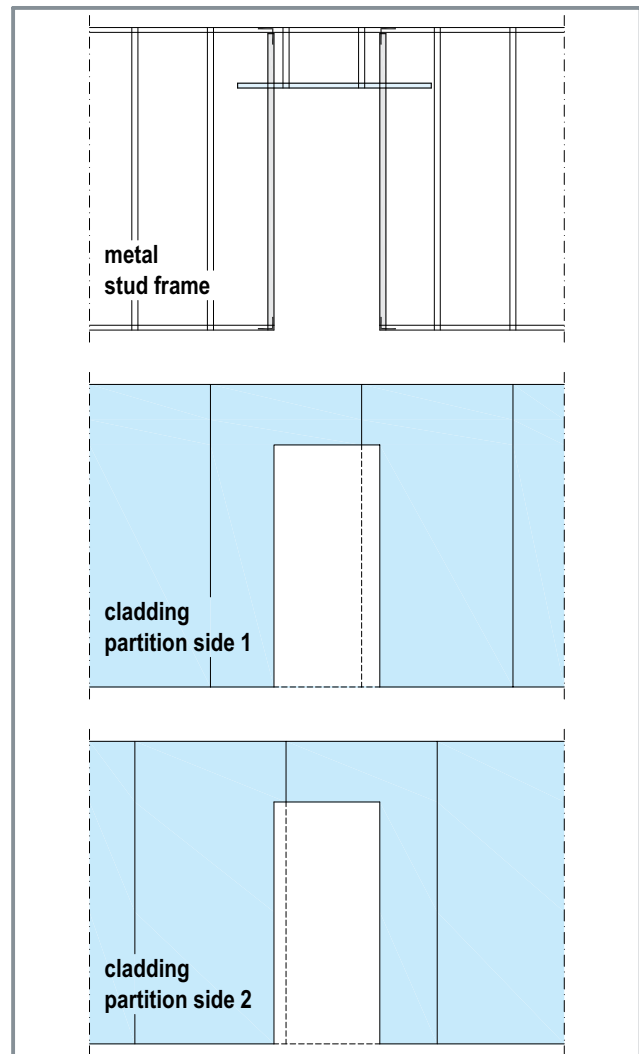
Set includes:
4 Door Frame Brackets and 10 dowels

Maximum door panel weight

Variation CW+ Knauf CW+ Studs	Knauf CW+ studs interlaced with wood inlay
≤ 25 kg	≤ 60 kg

Note

For heavy duty door panels ≥ 60 kg contact Knauf Drywall Systems Technical Team.

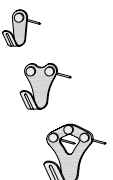
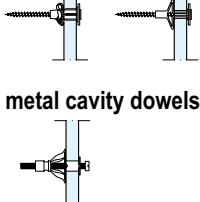

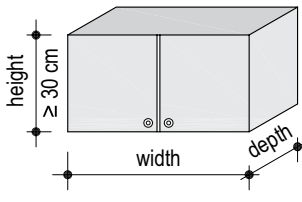
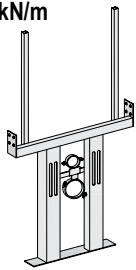


DIN 4103: Installation Zones / Cantilever Loads

Installation zones

Installation zone 1	Installation zone 2
Partitions in rooms where low numbers of persons gather, e.g. dwellings, hotels, office and hospital rooms including corridors and halls or similar.	Partitions in rooms where large numbers of persons gather, e.g. meeting halls, school classrooms, lecture rooms, exhibition halls and sales-rooms and rooms with floor height differences of ≥ 1 m.

Cantilever loads

up to 15 kg hook light items e.g. pictures can be fastened with X-Hooks  loading 5 kg loading 10 kg loading 15 kg	up to 0.7 kN/m dowel plastic cavity dowels  metal cavity dowels  cabinet 	up to 1.5 kN/m sanistands/ traverses Cantilever loads above 0.7 kN/m up to 1.5 kN/m wall length are to be transferred into the metal stud frame via traverses or sanistands 
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Dowel loading - tension and shear stresses

Thickness of cladding	Plastic cavity dowel	Metal cavity dowel
mm	ø 8 or ø 10 mm	screw M5 or M6
	kg	kg
12,5	25	30
20	35	40
$\geq 2 \times 12,5$	40	50

According to DIN 18183 cantilever loads up to 0.7 kN/m wall length can be applied to any position on partitions under consideration of the cantilever arm (closet height ≥ 30 cm) and eccentricity (closet depth ≤ 60 cm). Spacing of dowels ≥ 75 mm.

The fastening of cantilever loads has to be done with at least 2 cavity dowels made of plastic or metal, e.g. Tox Universal, Fischer Universal, Molly Screwing Anchor.

Diagram 1

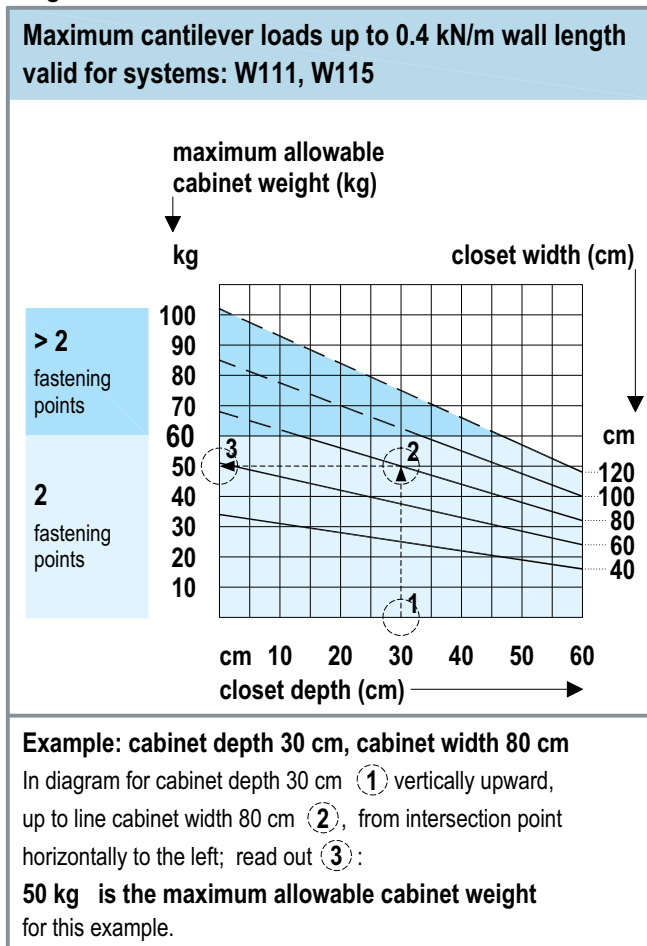
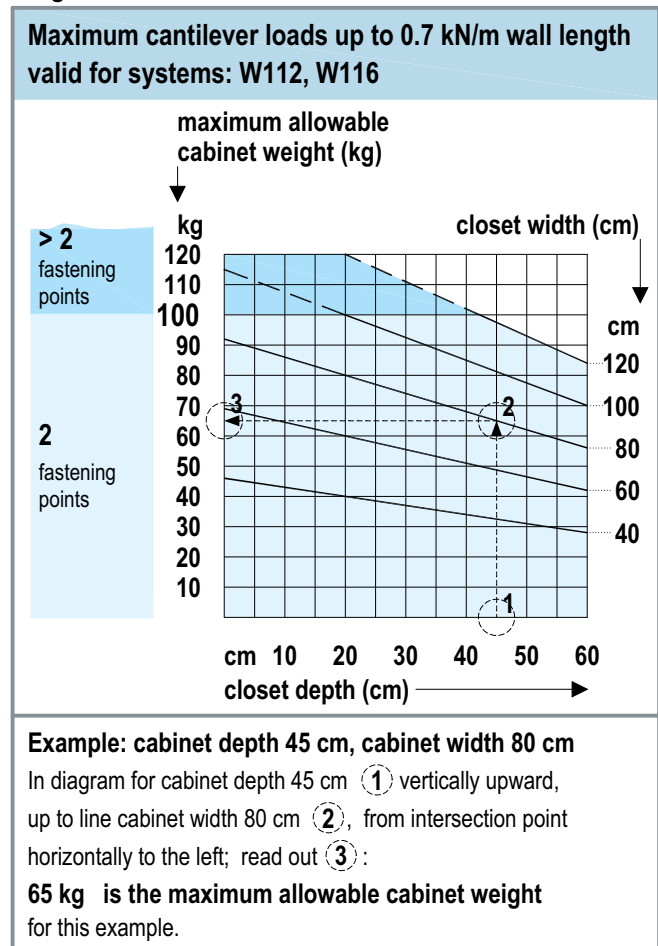


Diagram 2



Material Requirements

Material requirement per m² partition without addition for loss and waste.						
Amounts refer to an area of: W111 to W116: H= 2.75 m; L= 4 m; A= 11 m².						
description		unit	amount as average value			
<i>italic = not provided by Knauf</i>			W111	W112	W115	W116
metal stud frame						
	UW Track (any size) (4 m long)	m	0.7	0.7	1.4	1.4
	(4 m long)					
	(4 m long)					
	Knauf CW+ Stud (any size)	m	2.0	2.0	4.0	4.0
	Sealing Tape sections 70/3.2 mm, 100 mm long; (25 m roll)	m	-	-	0.5	-
or	Knauf Acoustical Sealant; (pouch 550 ml)	pcs	0.3	0.3	0.6	0.6
	Knauf Sealing Tape; (25 m roll)					
	50/3.2 mm	m	1.2	1.2	2.4	2.4
resp.	70/3.2 mm					
resp.	92/3.2 mm					
	146/3.2 mm					
resp.	Nailable Plug "K" 6/35; (100 pcs. box)	pcs	1.6	1.6	3.2	3.2
	Nailable Plug "K" 6/50; (100 pcs. box)					
	(for connections to plastered surfaces)					
	insulation (for fire protection see pages 4+5)	m²	as req.	as req.	as req.	as req.
 mm thick					
	40 mm + 60 mm thick					
cladding						
resp.	Knauf Regular RG / MR (impregn.); 12.5 / 15 mm		2.0	4.0	4.0	4.1
	Knauf Fire Res. Board FR/FM (impregn.); 12.5 / 15mm					
	Knauf Drywall Screws; (fastening of cladding)					
	TN 3.5 x 25 mm	pcs	29	13	13	17
	TN 3.5 x 35 mm		-	29	29	29
	TN 3.5 x 55 mm		-	-	-	-
jointing						
	Knauf Fugenfuller; (30 kg bag)	kg	0.5	0.8	0.8	0.8
or	Knauf Readyfix (28 kg pail)		0.8	1.0	1.0	1.0
		kg	-	-	-	-
	Knauf Joint Tape; (90 m roll)	m	1.5	1.5	1.5	1.5
	Edge Trim 23/13; (2.75 m long)	m				
	Corner Trim 31/31; (2.60 m/3 m long)	m	as req.	as req.	as req.	as req.
	Alux Corner Tape width 52 mm; (30 m roll)	m				

as req.= as required

Note

Values without determined fire or sound protection requirements

Example Specifications

Single Board Cladding + Single Stud + None Fire Rated Partitions	
System Description	
System Code:	Knauf Metal Stud Partition W111
Partition Type	Non-load bearing partition according to DIN4103-1
Installation Zone	1
Performance	
Maximum Height	3.15m at 600mm Stud Spacing
Limiting Deflection	L/240
Maximum Air Pressure	240Pa
Fire Resistance Class	
Sound Reduction Index (Rw,r)	42dB when tested according to EN ISO 140-3
Construction	
Partition Width	75mm (excluding finishes)
Head Condition	To underside of structural soffit
Head Deflection allowance	10mm
Framing	
Stud Configuration:	Knauf CW+50/44/0.6mm Studs spaced at 600mm
Head/Floor Tracks	Knauf UW50/32/0.6mm Tracks fixed to perimeter
Board Cladding	
Board Type	1x12.5mm Knauf Regular Gypsum Board to each side of stud ** Use Knauf Moisture resistant Gypsum Board in humid areas
Screws	Knauf TN25mm Drywall Screws spaced at every 250mm
Sealant	Knauf Acoustical Sealant/Knauf Sealing Tape
Insulation	
Type	Mineral Wool
Thickness	40mm
Density	min. 18kg/m3
Finishing	
Tape and Joint	Taped and jointed for a seamless finish using Knauf Joint Tape and Joint Compounds
Skim Coat (optional)	Skim coating with Knauf Readyfix for Q3 level high quality surface level requirement
Double Board Cladding + Single Stud + 1.5 Hour Fire Rated Partitions	
System Description	
System Code:	Knauf Metal Stud Partition W112
Partition Type	Non-load bearing partition according to DIN4103-1
Installation Zone	1
Performance	
Maximum Height	4.80m at 600mm Stud Spacing
Limiting Deflection	L/240
Maximum Air Pressure	240Pa
Fire Resistance Class	90 minutes when tested according to DIN4102-2 and BS476: Parts 20&22: 1987
Sound Reduction Index (Rw,r)	52dB when tested according to EN ISO 140-3
Construction	
Partition Width	120mm (excluding finishes)
Head Condition	To underside of structural soffit
Head Deflection allowance	10mm
Framing	
Stud Configuration:	Knauf CW+70/44/0.6mm Studs spaced at 600mm
Head/Floor Tracks	Knauf UW70/32/0.6mm Tracks fixed to perimeter
Board Cladding	
Board Type	2x12.5mm Knauf Fire resistant Gypsum Board to each side of stud ** Use Knauf Fire and Moisture resistant Gypsum Board in humid areas
Screws	Knauf TN25mm Drywall Screws spaced at every 750mm at first layer of board cladding, Knauf TN35mm Drywall Screws spaced at every 250mm at second layer of board cladding
Sealant	Knauf Acoustical Sealant/Knauf Sealing Tape
Insulation	
Type	Mineral Wool
Thickness	60mm
Density	min. 18kg/m3
Finishing	
Tape and Joint	Taped and jointed for a seamless finish using Knauf Joint Tape and Joint Compounds
Skim Coat (optional)	Skim coating with Knauf Readyfix for Q3 level high quality surface level requirement

Example Specifications

Double Board Cladding + Single Stud + Two Hour Fire Rated Partitions	
System Description	
System Code:	Knauf Metal Stud Partition W112
Partition Type	Non-load bearing partition according to DIN4103-1
Installation Zone	1
Performance	
Maximum Height	4.80m at 600mm Stud Spacing
Limiting Deflection	L/240
Maximum Air Pressure	240Pa
Fire Resistance Class	120 minutes when tested according to DIN4102-2 and BS476: Parts 20&22: 1987
Sound Reduction Index (Rw,r)	53dB when tested according to EN ISO 140-3
Construction	
Partition Width	130mm (excluding finishes)
Head Condition	To underside of structural soffit
Head Deflection allowance	10mm
Framing	
Stud Configuration:	Knauf CW+70/44/0.6mm Studs spaced at 600mm
Head/Floor Tracks	Knauf UW70/32/0.6mm Tracks fixed to perimeter
Board Cladding	
Board Type	2x15mm Knauf Fire resistant Gypsum Board to each side of stud ** Use Knauf Fire and Moisture resistant Gypsum Board in humid areas
Screws	Knauf TN25mm Drywall Screws spaced at every 750mm at first layer of board cladding, Knauf TN35mm Drywall Screws spaced at every 250mm at second layer of board cladding
Sealant	Knauf Acoustical Sealant/Knauf Sealing Tape
Insulation	
Type	Mineral Wool
Thickness	60mm
Density	min. 18kg/m3
Finishing	
Tape and Joint	Taped and jointed for a seamless finish using Knauf Joint Tape and Joint Compounds
Skim Coat (optional)	Skim coating with Knauf Readyfix for Q3 level high quality surface level requirement
Double Board Cladding + Double Stud + High Sound Insulating Separating Wall Partitions	
System Description	
System Code:	Knauf Metal Stud Partition W115
Partition Type	Non-load bearing partition according to DIN4103-1
Installation Zone	1
Performance	
Maximum Height	3.35m at 600mm Stud Spacing
Limiting Deflection	L/240
Maximum Air Pressure	240Pa
Fire Resistance Class	90 minutes when tested according to DIN4102-2 and BS476: Parts 20&22: 1987
Sound Reduction Index (Rw,r)	59dB when tested according to EN ISO 140-3
Construction	
Partition Width	130mm (excluding finishes)
Head Condition	To underside of structural soffit
Head Deflection allowance	10mm
Framing	
Stud Configuration:	2xKnauf CW+70/44/0.6mm Studs spaced at 600mm. Knauf Sealing Tape Strips attached to stud flanges with 50cm spacing for decoupling metal frame
Head/Floor Tracks	2xKnauf UW70/32/0.6mm Tracks fixed to perimeter
Board Cladding	
Board Type	2x12.5mm Knauf Fire resistant Gypsum Board to each side of stud ** Use Knauf Fire and Moisture resistant Gypsum Board in humid areas
Screws	Knauf TN25mm Drywall Screws spaced at every 750mm at first layer of board cladding, Knauf TN35mm Drywall Screws spaced at every 250mm at second layer of board cladding
Sealant	Knauf Acoustical Sealant/Knauf Sealing Tape
Insulation	
Type	Mineral Wool
Thickness	2x40mm
Density	min. 18kg/m3
Finishing	
Tape and Joint	Taped and jointed for a seamless finish using Knauf Joint Tape and Joint Compounds
Skim Coat (optional)	Skim coating with Knauf Readyfix for Q3 level high quality surface level requirement

Example Specifications

Double Board Cladding + Double Stud + Installation/Plumbing Wall	
System Description	
System Code:	Knauf Installation W116
Partition Type	Non-load bearing partition according to DIN4103-1
Installation Zone	1
Performance	
Maximum Height	3.80m at 600mm Stud Spacing
Limiting Deflection	L/240
Maximum Air Pressure	240Pa
Fire Resistance Class	30 minutes when tested according to DIN4102-2 and BS476: Parts 20&22: 1987
Sound Reduction Index (Rw,r)	52dB when tested according to EN ISO 140-3
Construction	
Partition Width	>220mm (excluding finishes)
Head Condition	To underside of structural soffit
Head Deflection allowance	10mm
Framing	
Stud Configuration:	2xKnauf CW+50/44/0.6mm Studs spaced at 600mm. Knauf Sealing Tape Strips attached to stud flanges with 50cm spacing for decoupling metal frame Studs attached to each other from web part with 12.5mm gypsum board strips with 300mm height for reinforcement
Head/Floor Tracks	2xKnauf UW50/32/0.6mm Tracks fixed to perimeter
Board Cladding	
Board Type	2x12.5mm Knauf Fire resistant Gypsum Board to each side of stud ** Use Knauf Fire and Moisture resistant Gypsum Board in humid areas
Screws	Knauf TN25mm Drywall Screws spaced at every 750mm at first layer of board cladding, Knauf TN35mm Drywall Screws spaced at every 250mm at second layer of board cladding
Sealant	Knauf Acoustical Sealant/Knauf Sealing Tape
Insulation	
Type	Mineral Wool
Thickness	2x40mm
Density	min. 18kg/m3
Finishing	
Tape and Joint	Taped and jointed for a seamless finish using Knauf Joint Tape and Joint Compounds
Skim Coat (optional)	Skim coating with Knauf Readyfix for Q3 level high quality surface level requirement

Note

Example specifications given on pages 15,16 and 17 are for guidance purposes only. Based on the technical information given on this brochure, project specifiers can modify all of the performance and construction values in order to match their project requirements when specifying W11 partition systems.

For specification support please contact Knauf Drywall Systems technical team.

Construction and Application

Construction

Knauf Metal Stud Partitions consist of a single metal stud frame (W111, W112,) or double metal metal stud frame (W115, W116) and a cladding of Knauf Boards RG or MR impregnated/ Fire Resistant Boards FR or FM impregnated/ LaVita Shielding Boards FR/ KNAUF Piano Sound Shield RG, FR or FM on both sides. The metal framework is fixed at the entire perimeter.

Cladding with 1 to 2 layers.

For Knauf solutions for partitions with vertical exaggeration ask Knauf Sales Force.

Insulation material for sound and thermal insulation as well as sanitary or electric built-ins can be installed into the metal frame construction.

Movement joints have to be taken over into the construction of the partitions. For continuous partitions use control joints at approx. 15 m.

W115 Separating Wall

For high sound protection requirements two rows of metal studs are installed parallel, isolated by Sealing Tape.

W116 Installation Wall

For the application of installation in the partition cavity two rows of studs can be installed and connected with Knauf Gypsum Board strips.

Application

Metal stud frame

- Apply Acoustical Sealant (two strings) or Sealing Tape to backside of runners for the connection of flanking constructional components. For sound protection requirements seal up carefully with acoustical sealant according to DIN 4109, supplement 1, chapter 5.2; porous sealant strips like Sealing Tape are usually not suitable in this case.
- If a deflection of the ceiling ≥ 10 mm can be expected install deflection heads.
- Fix perimeter runners and studs with suitable dowels to flanking components. Spacing of dowels 1 m with at least 3 fixing points at walls.
- Anchors for solid flanking components: nailable plug/ not solid flanking components: anchors have to be permitted and standardized for the building material being used.
- Install CW studs into UW runners and align.

W116 Installation Wall

Connect double metal studs with approx. 30 cm wide Gypsum Board strips (spacing approx. 60 cm) to "frame studs".

Cladding

- Cladding preferably with vertically applied floor-to-ceiling Knauf boards. Displace joints. No joints at door opening profiles.
- For fire protection requirements fill connection to floor with filler, for sole sound protection requirements Acoustical Sealant or acrylate can be used.
- Spacing of screws 25 cm (for the first layer of double layer cladding the spacing can be increased to 75 cm).

W111

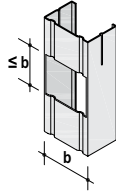
If not using floor-to-ceiling boards displace horizontal joints at least 400 mm. Filling of cut edge joints with Joint Tape is recommended. For fire protection requirements cover cut edge joints with profiles.

Construction and Application, Jointing/ Surface Treatment

Fixing of Knauf boards with Drywall Screws TN and TB

Cladding thickness in mm	Fixing of Knauf boards to metal studs (minimum penetration 10 mm)	
	metal thickness $s \leq 0.7 \text{ mm}$	$0.7 \text{ mm} < s \leq 2.25 \text{ mm}$
12.5 RG/ FR	TN 3.5 x 25	TB 3.5 x 25
2 x 12.5 RG/ FR	TN 3.5 x 25 + TN 3.5 x 35	TB 3.5 x 25 + TB 3.5 x 45
2 x 15 FR, 15 + 12.5 FR	TN 3.5 x 25 + TN 3.5 x 45	TB 3.5 x 35 + TB 3.5 x 45
2 x 18 FR, 25 + 12.5 FR	TN 3.5 x 35 + TN 3.5 x 55	TB 3.5 x 45 + TB 3.5 x 55
3 x 12.5 RG/ FR	TN 3.5 x 25 + TN 3.5 x 35 + TN 3.5 x 55	TB 3.5 x 25 + TB 3.5 x 45 + TB 3.5 x 55

Maximum web cutout of CW+ studs of metal stud partitions

Metal stud	Cladding	Web cutout number of openings	dimensions of opening 
CW+ 70/CW+ 92/CW+ 146	single layer	1 per stud	
	multi layer	2 per stud	
CW+ 50	multi layer	1 per stud	

The openings according to this table can be applied in addition to the existing H punches.

Jointing / Surface Treatment

Filling materials

- If using tape, hand fill with Knauf Fugenfüller or with Knauf Readyfix and Knauf Joint Tape.
- Use Knauf Readyfix for the final filling as fine finish before sanding the joints.

Implementation

- For multi layer cladding, fill in joints of first layers, smooth joints of top layer.
- Cover all visible screw heads as well.
- **Recommendation:** Fill in and tape cut edges of visible layers no matter which filling material is used.
- Use Knauf Spezialgrund to prime the entire surface of filled Knauf boards to control suction and for optical harmonization of the surface. Knauf Spezialgrund is a system component for the creation of surfaces with higher quality requirements according to code of practice no. 2 "Verspachtelung von Gipsplatten - Oberflächengüten" of the IGG.

Application temperature/ Climate

- Filling and covering of joints should only take place after the boards have been allowed to rest in the given humidity and temperature zones, and no more longitudinal changes can be expected, i.e. expansion or contraction.
- Joints should be filled at a minimum temperature of +10°C (50°F).
- In case of mastic asphalt screed, fill in joints after screed has been applied.

Surface Treatment

Use a primer on Knauf Boards before coating or painting them. Ensure that the primer and the coat or paint are compatible.

The following coats can be used to cover Knauf Boards:

- Coats: Washable and abrasion-proof emulsion paint, multicolored (rainbow) emulsion, oil paint, matte-finish lacquer, alkyd resin paint, polymer resin paint, PUR lacquer, or epoxy-based lacquer, according to intended use or as required.
- Ceramic tiles: For tiling at least double layer cladding is recommended.
- Plasters: Knauf structured plasters, e.g. resin plasters, thin plasters, entire surface smoothing like e.g. Knauf Readyfix, mineral plasters in connection with paper taped jointing. After the application of resin / cellulose plasters quick drying must be assured through adequate airing.
- Wallpapers: paper, textile and synthetic wallpapers. Use only adhesives made of cellulose according to code of practice no. 16 "Technische Richtlinien für Tapezier- und Klebearbeiten", Frankfurt/Main 2002, released by Bundesausschuss Farbe und Sachwertschutz. After wallpapering of paper and fiber glass wallpapers quick drying must be assured through adequate airing.
- Alkaline coats such as lime, water glass colors and silicate-based paints are unsuitable for gypsum board surfaces.

- Silicate-based emulsion paints may be used after referring to the manufacturer's recommendations and following the stipulated guidelines closely.

Gypsum board surfaces that have constantly been exposed to light without any protection can develop yellowing agents that show up despite a coat of paint. Therefore a trial coat is recommended that will extend across several boards including all joints. Yellowing can, however, be successfully avoided only by using a special shielding primer.

Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Knauf Drywall Systems publishes updated technical information on various products and topics. In order to request any of the brochures listed below, please contact our office at the address given below.

Knauf Drywall Systems Guide

Knauf Access Panels Brochure

Knauf Drywall Tools Brochure

Knauf Drywall Training Brochure

Knauf Cleaneo Acoustic Ceilings Brochure

D11 Knauf Ceilings Technical Datasheet

W11 Knauf Partitions Technical Datasheet

D12 Knauf Cleaneo Acoustic Ceilings Technical Datasheet

Knauf Access Panels Technical Brochure